valuable matter on the subject he has taken in hand, and he puts it before the reader with clearness and precision. Should another edition be called for, some of the valuable results obtained by Dr. Bashforth and the more modern work in ballistics, which has been carried on in the United States of America, in Germany and in England, might be introduced with advantage. F. J-S.

THE COMPLETION OF ROSCOE AND SCHORLEMMER'S ORGANIC CHEMISTRY.

Roscoe-Schorlemmer's Lehrbuch der Organischen Chemie. By Jul. Wilh. Brühl, Professor in the University of Heidelberg. Seventh Part, in conjunction with Eduard Hjett and Ossian Aschan, Professors in the University of Helsingfors; O. Cohnheim, O. Emmerling and E. Vahlen, Privatdocenten in the Universities of Heidelberg, Berlin and Halle. Pp. xxxii + 527. (Brunswick: F. Vieweg und Sohn, 1901.)

THE seventh part of the above text-book, which forms the ninth volume of the entire work, brings to a close the publication of that standard treatise of which two of the earlier volumes were reviewed in these columns on a former occasion (November 14, 1901, Supp. iii.). Beyond an indication of the contents of the present volume, there is not much to add in the way of general remarks to the statements already made. The whole work of translating and editing the early volumes and of writing the later ones has cost Dr. Brühl and his coadjutors five years' labour. As one result of the task which the editor first took in hand in 1896, chemical literature has been enriched by a series of valuable monographs written by specialists, these monographs, some of which were noticed in NATURE at the time of their appearance, being separate issues of certain sections of the present and former volumes. Chemists are no doubt familiar with the works on five- and six-membered heterocyclic systems (1898 and 1899), on vegetable alkaloids (1900) and on albuminoid substances (1900), all of which have originated in the manner indicated.

This concluding volume of the great treatise which first saw light in this country is one which appeals most particularly to physiologists. The four groups of compounds with which it deals are all, strictly speaking, and in the narrow sense, "organic," *i.e.* of vital origin. Dr. Cohnheim's contribution, "Die Eiweisskörper," is already known in its separate form; it occupies more than 300 pages of the volume. The same author contributes a section of some twenty pages on the compounds found in animal gall secretion. The third section, of more than 100 pages, comprises Dr. Emmerling's monograph on enzymes, and the concluding section, which is by Dr. Vahlen, deals with the ptomaines and toxines. It must be stated also that the present volume, in addition to its own subject-matter, contains a general synopsis of the contents and a general index for the whole seven volumes of the treatise on organic chemistry.

As regards the treatment of the subjects dealt with in this concluding instalment of the work, it need only be repeated that the names of the writers are vouchers for their completeness and accuracy. As compared with this and the volumes formerly noticed in these columns the earlier volumes are, of course, now much behind our actual state of knowledge. But as standards fixed by the dates on the title-pages, these seven volumes represent the most complete and coherent descriptive treatise on the chemistry of the carbon compounds as yet offered to the scientific world. We shall be curious to see how our German colleagues will grapple with the literary difficulty of keeping a work of this exhaustive character *au courant* of the rapid progress which is being made in this department of science. As the editor reminds us in the preface, organic chemistry as a distinct branch of our science was born and has grown to its present magnitude during the nineteenth century. In congratulating Dr. Brühl and his collaborators on the completion of their task, we can assure him that there is every prospect of his wish that organic chemistry should develop as much during the twentieth as it has during the preceding century being fulfilled. We may further assure him that his hope that the work which he has been instrumental in giving to chemists may contribute towards this future development is amply justified. Of the original authors, one is happily still with us; to the memory of the other, this treatise will serve as an enduring monument. R. MELDOLA.

JAPANESE MYTHOLOGY.

Japanische Mythologie. Nihongi "Zeitalter der Götter." Von Dr. Karl Florenz. Pp. ix+341; mit Illustrationen. (Tokyo, 1901.)

DR. FLORENZ is well known as a writer on Japan, and in his present work he adds one more volume to the many which he has published on that interesting subject. Some years ago he gave to the world the translation of a part of the "Nihongi," one of the earliest productions of Japanese literature, and in his present volume he takes the mythological portion of that work and by the aid of notes helps to throw considerable light on the very dark places of Japanese mythology.

The "Nihongi" yields in antiquity to only two other works, viz. the "Kiujiki," which was compiled in A.D. 620, and the "Kojiki," which was completed in 712. Eight years later the "Nihongi" was laid before the Empress Gemmio as a complete work. The "Nihongi," or the "Records of Japan," is said to have been written by Shotoku Daishi, and it is certain that only an author as well versed in Buddhist lore and Chinese classical literature as he was could possibly have written it.

To both of these wells of learning constant references are made, and throughout its pages the influence of Chinese thought is everywhere apparent. The opening sentence in the book contains the Chinese philosophical terms *Yin* and *Yang*, the male and female principles of Nature, which form a strange introduction to the mythology of a foreign land. The Chinese metaphor for the State, the temples of "The Earth and of Grain," also find frequent mention in its pages, and even a long dying speech originally uttered by the Chinese Emperor Kaotsu is put into the mouth of the Japanese sovereign Yuriaku. As Dr. Florenz says:—

"The little which European inquiry has hitherto been able to teach us of the real condition of Japan in the ancient times shows that the historical representation of this period in the 'Kojiki' and 'Nihongi' (upon which rest all the later statements of the Japanese) is most profoundly penetrated by false principles. The newer relations, partly developed from later material, partly influenced by Chinese culture, are reflected back upon the oldest without due distinction, and the result is a confused picture in which the critical inquirer can, it is true, frequently separate what is original from subsequent additions, but must often let fall his hands in despair."

The earliest part of the "Nihongi" consists of myths, pure and simple, and while it is necessary to sift the mass of legendary tales which it recounts for the grains of truth which it contains—and the grains are there—its value is enhanced by the poems of undoubted antiquity which are constantly introduced. This mythological period extends to the fifth century, and it is upon this portion of the history, with extracts from the "Kojiki," that Dr. Florenz has based his present work.

Japan is a land of myth. Of a more imaginative race than the Chinese, and enriched with the stores of legend gathered from the Malay Peninsula and the northern mainland of Asia, the Japanese have through all history revelled in the weird conceptions of the imagination, and even at the present day, unchecked by the veneer of civilisation which they have adopted, they see elves and fairies on every hill and in every valley, and recognise elfin foxes in moments of heightened fancy.

According to the "Nihongi," the creation of the world was after this wise, and here again we trace the influence of Chinese thought. In the beginning the universe was in a state of chaos, out of which by a process of disintegration the lighter and finer portions separated themselves from their surroundings and rising upwards formed the skies, while the more substantial constituents resolved themselves into the world. These two elements formed the male and female principles of Nature and begat certain deities, two of whom, Izanaki and Izanami, were the first to divide the land from the waters. We are told that these deities

"stood on the floating bridge of heaven and held counsel together, saying 'Is there not a country beneath?' Thereupon they thrust down the jewel spear of heaven and groping about therewith found the ocean. The brine which dripped from the point of the spear coagulated and became an island, which received the name of Onogoro," *i.e.* self-curdled.

This legend is interesting as reminding us of the Greek myth of Dêlos, *i.e.* Manifest, which was so called from its suddenly emerging from the sea. Dêlos was, as will be remembered, the centre or hub of the Cyclades, which derived their name, ἀπὸ κύκλου, from the wheel. Another and a still more striking parallel is furnished by the account which relates that "Poseidon with one blow of his trident made the island surge from the bottom of the ocean." In other lands besides Greece we recognise this legend under varying forms, and, indeed, on almost every page of Dr. Florenz's work we find traces of world-wide myths. One of the most widely spread of these is that of St. George and the Dragon. Sosa no wo no Mikoto in this case represents the Christian St. George and Kushi-nada-hime is the lovely maiden whom he rescues from the fangs of the serpent or dragon.

To the comparative mythologist Prof. Florenz's work will be invaluable. But, as it professes to be, it is essentially a book for the student of folk-lore. By such it will be found full of suggestive matter, while it is much to be feared that to the ordinary reader it will be but a weariness to the flesh.

OUR BOOK SHELF.

An Introduction to Chemistry. By D. S. Macnair, Ph.D., B.Sc. Pp. xii + 187. (London: George Bell and Sons, 1902.) Price 2*s.*

WHATEVER may be thought of the use of text-books in teaching elementary science, there can be no doubt as to the improvement which has taken place in the character of such books in recent years. The change is particularly noticeable in volumes dealing with the rudiments of chemistry and physics. Instead of the descriptive style formerly in vogue, we have now courses of practical work connected with a few explanatory paragraphs, and the whole constructed upon a plan which aims at making the pupil do things for himself and so far as possible arrive at his own conclusions.

Dr. Macnair's book is based upon this method, and as a representative of a good type it deserves a welcome from teachers of science. Beginning with simple observations and experiments on solubility, the author paves the way to the study of the rusting of iron, the atmosphere, water, chalk and a few other common bodies, following in a general way the course suggested by Prof. Armstrong, which is now followed in many schools, with results encouraging both to teachers and pupils.

As to the educational value of work of the kind described by Dr. Macnair, no one who has tried it with young pupils desires to go back to the old method of teaching chemistry by test-tubing in the laboratory and startling experiments in the lecture room. Quantitative work which was formerly postponed until pupils were able to make an analysis of a simple salt is now taken up at the beginning of a course, and early use is made of squared paper for plotting results. Dr. Macnair, for instance, shows on his twelfth page how solubility curves should be constructed from results of experiments.

To anyone familiar with the excellent work now being done in schools, by the practical study of common properties of matter, the book adds little that is new, and many of the experiments will be recognised. But this does not make the book any the less useful as a practical manual containing a course of work suitable for introducing pupils to methods of scientific study.

A Tentative List of the Flowering Plants and Ferns for the County of Cornwall, including the Scilly Isles. By F. H. Davey. Pp. xvi+276. (Penryn: F. Chegwidden, 1902.)

THE spirit in which Mr. F. H. Davey has taken up the task of preparing a "Flora of Cornwall," which shall rank with Druce's "Flora of Berkshire" and other similar handbooks bodes well for success. In two years and a half this tentative list has been formulated, and as one looks through the list of species and records there is ample proof of excellent work. The principle of the book is to give the first record for each species, besides a complete list of localities for species and varieties. Also it is sought to amplify the published list of plants found in Devon, but wanting in Cornwall, and to obtain details of local peculiarities of growth, as well as local names or any plant lore which can be unearthed. In the book